

## Designing Classroom Tests

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### Tests serve 4 functions:

1. Help teachers evaluate students and assess whether they are learning what you want them to learn
2. Motivate and structure students' academic efforts
3. Give a picture on how the teacher is successfully presenting material
4. Reinforce student learning providing feedback as to what skills they need to master

### General Strategies:

- Spend time developing your tests
- Match your test to the content you are teaching
- Try to make tests valid, reliable, and balanced Use a variety of testing methods
- Write questions that test skills other than recall
- Take precautions to avoid cheating

### True/False

#### *Good for:*

- Knowledge level content
- Evaluating student understanding of popular misconceptions
- Concepts with two logical responses

#### Advantages:

- Can test large amounts of content
- Students can answer 3-4 questions per minute

#### *Disadvantages:*

- They are easy

- It is difficult to discriminate between students that know the material and students who don't
- Students have a 50-50 chance of getting the right answer by guessing
- Need a large number of items for high reliability

#### *Tips for Writing Good True/False items:*

- Avoid double negatives.
- Avoid long/complex sentences.
- Use specific determinants with caution: never, only, all, none, always, could, might, can, may, sometimes, generally, some, few.
- Use only one central idea in each item.
- Don't emphasize the trivial.
- Use exact quantitative language
- Don't lift items straight from the book.
- Make more false than true (60/40). (Students are more likely to answer true.)

### Matching

#### *Good for:*

- Knowledge level
- Some comprehension level, if appropriately constructed

#### *Types:*

- Terms with definitions
- Phrases with other phrases
- Causes with effects
- Parts with larger units
- Problems with solutions

*Advantages:*

- Maximum coverage at knowledge level in a minimum amount of space/preptime
- Valuable in content areas that have a lot of facts

*Disadvantages:*

- Time consuming for students
- Not good for higher levels of learning

*Tips for Writing Good Matching items:*

- Need 15 items or less.
- Give good directions on basis for matching.
- Use items in response column more than once (reduces the effects of guessing).
- Use homogenous material in each exercise.
- Make all responses plausible.
- Put all items on a single page.
- Put response in some logical order (chronological, alphabetical, etc.).
- Responses should be short.

**Multiple Choice***Good for:*

- Application, synthesis, analysis, and evaluation levels

*Types:*

- Question/Right answer
- Incomplete statement
- Best answer

*Advantages:*

- Very effective

- Versatile at all levels
- Minimum of writing for student
- Guessing reduced
- Can cover broad range of content

*Disadvantages:*

- Difficult to construct good test items.
- Difficult to come up with plausible distracters/alternative responses.

*Tips for Writing Good Multiple Choice items:*

- Stem should present single, clearly formulated problem.
- Stem should be in simple, understood language; delete extraneous words.
- Avoid "all of the above"--can answer based on partial knowledge (if one is incorrect or two are correct, but unsure of the third...).
- Avoid "none of the above."
- Make all distracters plausible/homogenous.
- Don't overlap response alternatives (decreases discrimination between students who know the material and those who don't).
- Don't use double negatives.
- Present alternatives in logical or numerical order.
- Place correct answer at random (A answer is most often).
- Make each item independent of others on test.
- Way to judge a good stem: student's who know the content should be able to answer before reading the alternatives
- List alternatives on separate lines, indent, separate by blank line, use letters vs. numbers for alternative answers.

- Need more than 3 alternatives, 4 is best.

## Short Answer

### *Good for:*

- Application, synthesis, analysis, and evaluation levels

### *Advantages:*

- Easy to construct
- Good for "who," "what," "where," "when" content
- Minimizes guessing
- Encourages more intensive study-student must know the answer vs. recognizing the answer.

### *Disadvantages:*

- May overemphasize memorization of facts
- Take care - questions may have more than one correct answer
- Scoring is laborious

### *Tips for Writing Good Short Answer Items:*

- When using with definitions: supply term, not the definition-for a better judge of student knowledge.
- For numbers, indicate the degree of precision/units expected.
- Use direct questions, not an incomplete statement.
- If you do use incomplete statements, don't use more than 2 blanks within an item.
- Arrange blanks to make scoring easy.
- Try to phrase question so there is only one answer possible.

## Essay

### *Good for:*

- Application, synthesis and evaluation levels
- *Types:*
  - Extended response: synthesis and evaluation levels; a lot of freedom in answers
  - Restricted response: more consistent scoring, outlines parameters of responses

### *Advantages:*

- Students less likely to guess
- Easy to construct
- Stimulates more study
- Allows students to demonstrate ability to organize knowledge, express opinions, show originality.

### *Disadvantages:*

- Can limit amount of material tested, therefore has decreased validity.
- Subjective, potentially unreliable scoring.
- Time consuming to score.

### *Tips for Writing Good Essay Items:*

- Provide reasonable time limits for thinking and writing.
- Avoid letting them answer a choice of questions (You won't get a good idea of the broadness of student achievement when they only answer a set of questions.)
- Give definitive task to student-compare, analyze, evaluate, etc.

- Use checklist point system to score with a model answer: write outline, determine how many points to assign to each part
- Score one question at a time-all at the same time.

## Oral Exams

*Good for:*

- Knowledge, synthesis, evaluation levels

*Advantages:*

- Useful as an instructional tool-allows students to learn at the same time as testing.
- Allows teacher to give clues to facilitate learning.
- Useful to test speech and foreign language competencies.

*Disadvantages:*

- Time consuming to give and take.
- Could have poor student performance because they haven't had much practice with it.
- Provides no written record without checklist.

## Student Portfolios

*Good for:*

- *Knowledge, application, synthesis, evaluation levels*

*Advantages:*

- Can assess compatible skills: writing, documentation, critical thinking, problem solving

- Can allow student to present totality of learning.
- Students become active participants in the evaluation process.

*Disadvantages:*

- Can be difficult and time consuming to grade.

## Performance

*Good for:*

- Application of knowledge, skills, abilities

*Advantages:*

- Measures some skills and abilities not possible to measure in other ways

*Disadvantages:*

- Can not be used in some fields of study
- Difficult to construct
- Difficult to grade
- Time-consuming to give and take

(From

<http://www.utc.edu/Administration/WalkerTeachingResourceCenter/FacultyDevelopment/Assessment/test-questions>)

# Alternate forms of Testing

## BOOK RESPONSE JOURNALS

Similar to a learning log, the book response journal is a place for students to express personal reactions and to wonder about events, themes, and ideas in a book. Children are encouraged to react to everything they read. Teachers may use these journals to respond to each child individually, sharing their questions, feelings, and ideas about literature and making suggestions for further reading or related activities. Some teachers hold individual reading conferences with their students and use these book response journals as part of the conferences.

## COMPARISON CHARTS

Comparison charts are one of a number of graphic organizers. They involve the examinations of similarities and differences among ideas, events, characteristics, etc. Comparison charts may take a number of forms and are an excellent way to engage students individually or in groups as they seek to focus characters, events, or themes within a single story or compare books, events, or properties within a given theme.

## CONFERENCES

There are many types of conferences including reading, writing, goal-setting, evaluation, and coaching. The major purposes are to collaborate, assess, and guide.

## COOPERATIVE LEARNING ACTIVITIES

Cooperative learning involves students working together in groups (often following a teacher presented lesson), with group goals and individual accountability. Critical to the process are two factors: 1) how to help another student without giving the answer; and 2) how to work together toward a common goal.

## DEMONSTRATIONS

A demonstration transforms ideas into something concrete and observable through visual, audio, art, drama, movement, and/or music. This could also include opportunities to demonstrate and explain procedures and strategies such as a science experiment or a solution to a non-routine math problem.

## DISCUSSION

A discussion provides a safe, open forum where children are encouraged to speak, listen, and respond to opinions, feelings, and ideas regarding the designated topic.

## GOAL SETTING

Setting goals with children provides the basis for monitoring student performance through collaboration and self reflection.

## GRAFFITI WALLS

Graffiti walls are free form spaces for brainstorming or communicating words, phrases, or ideas on a topic. These are often used as evolving records. A teacher may use them to facilitate brainstorming on a particular theme at the beginning of a unit, as well as encourage students to add new words or phrases relating to the theme as the unit progresses. In addition to encouraging children to search for new and interesting words, the graffiti wall serves as a class dictionary/thesaurus as students need novel words to enrich their writing.

## "I LEARNED" STATEMENTS

"I Learned" statements may be in either written or oral form. Their purpose is merely to give students a chance to self-select one or more of the things they learned during a class session, an investigation, or a series of lessons.

## INTERVIEWS

An interview is structured or unstructured dialogue with students in which the student reports his/her

reaction or response to a single question or a series of questions. This typically provides an opportunity for the teacher to determine the student's depth of understanding rather than whether the student can provide the "correct" answer. Questioning may follow a period of observation to discover if the student's perception of a situation is the same as the observer's

## **INVESTIGATIONS**

Investigations may be related to a specific subject area or may involve several areas, integrating curriculum. The most typical form of investigation is a collection of student writing, diagrams, graphs, tables, charts, posters, experiments and other products. When students become involved in practical or mathematic investigations, assessment activities and/or questions can be presented to students without their awareness of any difference between the assessment and instruction.

## **KWLS**

A KWL is a technique used by teachers to assess what students "know," "wish to know," and "have learned about a particular topic," using a sheet divided into three columns labeled K, W, L. At the beginning of a lesson, the KWL serves as a written record of the students prior knowledge (K) on the topic, and allows the opportunity for the student to note what they desire (W) to know about the topic. Following the lesson, the student can self-assess what has actually been learned (L) about the topic

## **LEARNING LOGS**

A learning log is a kind of journal that enables students to write across the curriculum. The major reason for using them is to encourage children to be in control of their own learning and to promote thinking through writing.

## **ORAL ATTITUDE SURVEYS**

Attitude surveys note in a systematic manner students' self reflections regarding group and individual performance and affective characteristics such as effort, values, and interest. Providing an oral survey allows students to share their ideas,

learn from others, and deepen the way they think about the topics being discussed.

## **ORAL PRESENTATIONS**

Oral presentations include speeches, storytelling, retellings, recitations, drama, videos, debates, and oral interpretation and are evaluated according to a predetermined criteria.

## **PEER EVALUATIONS**

Peer evaluations consist of student analysis and assessment of peer proficiency using either established or self-generated criteria. An activity must be very carefully structured if students are to receive valid feedback from their peers.

## **PROBLEM SOLVING ACTIVITIES**

In a problem solving activity, students must search for a means to find a solution, as well as for a solution to the problem. A good evaluation of the problem solving activity requires consideration of both the thinking process and the final product.

## **PRODUCTS**

Student products represent completed student work in a variety of forms; writing, videotapes, audiotapes, computer demonstrations, dramatic performances, bulletin boards, debates, etc. Students can demonstrate understanding, application, originality, organizational skills, growth in social and academic skills and attitudes, and success in meeting other criteria.

## **RESPONSE GROUPS**

Response groups are opportunities for small numbers of children to discuss books or events in depth with one another. Often these groups are organized and run by children themselves because they all have read the same book or experienced the same event and want to discuss it. Teachers participating in a response group will gain insight into their students' thinking skills, group behaviors, and affective characteristics

## SELF-EVALUATIONS

A key concept in alternative assessment is having the student learn to recognize his/her own progress by taking the time to reflect. Those who are able to review their own performance, explain the reasons for choosing the processes they used, and identify the next step, develop insight and self-involvement. Self-reflection, an important concept in any form of assessment, is a particularly important component of a student portfolio.

## RUBRICS

The Rubric is an authentic assessment tool which is particularly useful in assessing criteria which are complex and subjective.

Rubrics can be created in a variety of forms and levels of complexity, however, they all contain common features which:

- focus on measuring a stated objective (performance, behavior, or quality)
- use a range to rate performance
- contain specific performance characteristics arranged in levels indicating the degree to which a standard has been met.

### Steps in Rubric Development

[http://edweb.sdsu.edu/triton/july/rubrics/Rubric\\_Guidelines.html](http://edweb.sdsu.edu/triton/july/rubrics/Rubric_Guidelines.html)

1. Determine learning outcomes
2. Keep it short and simple (Include 4 - 15 items; use brief statements or phrases)
3. Each rubric item should focus on a different skill
4. Focus on how students develop and express their learning
5. Evaluate only measureable criteria
6. Ideally, the entire rubric should fit on one sheet of paper
7. Reevaluate the rubric (Did it work? Was it sufficiently detailed?)

### Terms to use in measuring range/scoring levels

Needs Improvement...Satisfactory...Good...Exemplary

Beginning...Developing...Accomplished...Exemplary

Needs work...Good...Excellent

Novice...Apprentice...Proficient...Distinguished

Numeric scale ranging from 1 to 5, for example

After you write your first paragraph of the highest level, circle the words in that paragraph that can vary. These words will be the ones that you will change as you write the less than top level performances.

Concept words that convey various degrees of performance

Depth...Breadth...Quality...Scope...Extent...Complexity...Degrees...Accuracy

Presence to absence

Complete to incomplete

Many to some to none

Major to minor

Consistent to inconsistent

Frequency: always to generally to sometimes to rarely

## CHECKLISTS

Checklists contain a list of behaviors or specific steps, which can be marked as Present/Absent, Complete/Incomplete, Yes/No, etc. In some cases, a teacher will use a checklist to observe the students. In other cases, students use checklists to ensure that they have completed all of the steps and considered all of the possibilities

## PORTFOLIOS

Portfolios are a similar, yet different aspect of performance assessment. Student portfolios are designed to document students' efforts, progress, and achievements. Although they consist of collections of student products, assessments, and reflections, they are not (strictly speaking) assessments. A portfolio is a purposeful collection of artifacts that tells the story of a person and

her/his skills, achievements, and/or growth, illustrated by a selection of her/his work

## **RATING SCALES**

Rating scales are used when a simple Yes/No or Present/Absent is not adequate for measuring the performance or product. The scales can include terms (such as novice, intermediate, and proficient), and they might include specific point values.

## **Internet Sites for Assessment Development:**

### **Multiple Choice/True-False/Matching**

<http://www.pass-it.org.uk/resources/031112-goodpracticeguide-hw.pdf>

<http://nust.edu.pk/general/How%20to%20Judge%20Quality%20of%20Objective%20Classroom%20Test.pdf>

<http://www.eductrak.com/teacher/classroomtesting/classroomtesting1.pdf>

<http://www.gse.buffalo.edu/fas/shuell/CEP502/Lectures/Week-7/index.htm>

Conderman, Greg, Koroghlanian, Carol (2002). Writing test questions like a pro. *Intervention in School & Clinic*; Nov2002, Vol. 38 Issue 2, p83

### **Grading Essays**

<http://www.smarrpublishers.com/rhetoric01.html>

### **Rubrics**

<http://www.rcampus.com/indexrubric.cfm>

<http://rubistar.4teachers.org>



## Poor Examples

1. What is not recommended when giving a child choices:

- (a) give a child a choice when possible
  - (b) honor the child's decision when he/she has made the best choice.
  - (c) all of the above
  - (d) none of the above
- 

2. One stick of butter is equal to:

- (a)  $\frac{1}{4}$  C
  - (b)  $\frac{1}{2}$  C
  - (c) 3 T
  - (d) 1 C
- 

3. Louis Pasteur was a:

- (a) politician
  - (b) actor
  - (c) scientist
  - (d) psychologist
- 

## True/False

1. Cooking larger amounts of food takes longer than cooking smaller amounts of food.
2. Microorganisms are tiny living things that may be poisonous or that may cause changes in food.
3. To help prevent rapid bacterial growth, do not leave perishable food out longer than two hours at room temperature..

## Good Examples

Which statement below describes guidelines when giving children choices?

- (a) Give a child a choice when only when a choice is possible.
  - (b) Change a child's choice if it doesn't seem to be an appropriate choice.
  - (c) Honor the child's decision only when h/she has made the best choice.
  - (d) Give the child at least six options.
- 

2. One stick of butter equals \_\_\_cup.

- (a)  $\frac{1}{4}$
  - (b)  $\frac{1}{3}$
  - (c)  $\frac{1}{2}$
  - (d)  $\frac{3}{4}$
- 

--- 3. Which of the following is Louis Pasteur's occupation? (a) actor

- (b) politician
  - (c) psychologist
  - (d) scientist
- 

1. Larger amounts of food take longer to cook in a microwave.
2. Microorganisms can cause harmful poisons in food.
3. Perishable food should be refrigerated within two hours.

<b>Matching</b>			
<b>Column A</b>	<b>Column B</b>	Match the ingredients in Column A to their purpose in Column B. Write the letter in the blank.	
-----1. flour	(a) makes bread tender	Column A	Column B
-----2. liquid	(b) enables bread to rise and become light and porous	-----1. flour	(a) makes bread tender
-----3. salt	(c) gives structure and body to the bread	-----2. liquid	(b) makes bread rise
-----4. shortening	(d) provides moisture and is needed to develop the gluten	-----3. Salt	(c) prevents dough from rising too quickly
-----5. Leavening agent	(e) improves the flavor	-----4. shortening	(d) gives structure to bread
		-----5. Leavening agent	(e) provides moisture
			(f) feeds the yeast
			(g) reduces the gluten

### Rubrics Poor Example

Ancient Cultures-Greek  
Description: Rubric for  
Ancient Cultures-Greek  
assignment

	Excellent!	Needs help...	What happened?
Sketch of Greek chair	Chair is sketched (not copied) in pencil onto top half of white 8 1/2 X 11 paper. Bottom half left for picture of current influence.	Chair is sketched (not copied) in pen (not pencil) onto paper. Bottom half is not left for picture of current influence.	Chair is copied in pencil or pen onto paper. Bottom half not left for picture of current influence.
Picture of current influence	Picture is cut cleanly and mounted onto bottom half of white paper. Description is typed and attached next to picture.	Picture is cut incorrectly and mounted onto another piece of paper. Description is written and attached next to picture.	Picture is not cut and mounted onto bottom half of white paper. Description is written or missing.
Neatness and labeling	Paper is crisp and neat. 1/2 of paper has sketch, the other half current influence. Name and assignment is labeled in architectural writing as well as sketch and current influence. Description of current influence is typed and mounted next to picture.	Paper is unclean and wrinkled. 1/2 of paper has sketch, the other half current influence. Name and assignment is not labeled in architectural writing as well as sketch and current influence. Description of current influence is written and mounted next to picture.	Paper is untidy. Pictures might be mounted on separate pieces of paper. Name and assignment is not labeled in architectural writing or missing, as well as sketch and current influence. No description of current influence is added.

**Rubric Good Example:**

CATEGORY	3	2	1	0
<b>Recipe Organizer</b>	Recipes are presented in a binder or recipe card file and well organized	Recipes are presented in a binder or recipe card file somewhat organized	Recipes are presented in a binder or recipe card file but is unorganized	No file box or recipe binder is provided for recipes
<b>Recipe Categories</b>	13 categories are presented in the recipe organizer	9-12 categories are presented in the recipe organizer	5-8-Categories are presented in recipe organizer	No categories are listed
<b>Family Recipes</b>	10 Family recipes are provided	7-9 Family recipes are provided	5-6 Family recipes are provided	No family recipes are provided
<b>Reflections/Stories</b>	Pictures and stories are provided for each recipe	Pictures and stories are provided for half of the recipes	Pictures and stories are provided for less than half of the recipes	None are provided
<b>Creativity</b>	Work is unique, creative, polished, and novel	Work is well crafted, and complete	Work is unclear undeveloped and lacks development	No evidence of creative presentation
<b>Presentation</b>	Work is unique, polished, elegant, neat, organized, and without spelling errors.	Work is well crafted, fully developed and complete	Work is partially developed and has minor errors.	Work is poor, incomplete, unorganized and has major errors.